

15

sleeve **486** working as a guide for cutting bone pocket **456** after insertion to appropriate depth into bone **412**. In particular, distal most tip **450** is brought into contact with an outer surface **460** of bone **412**, while sleeve **486** is located at a position away from the tapered drill end **432**. Bone cutting tool **400** is rotated around longitudinal axis **440** by manipulation of driving device **436**. Gradually, bone cutting tool **400** moves into and through outer surface **460** of bone **412** by the cutting action of tapered drill end **432**. Bone cutting tool **400** may establish a bore **462** within bone **412** having an inner diameter **464** that corresponds to the outer diameter **430** of tapered drill end **432**. Bone cutting tool **400** advances inwardly of bone **412** until an appropriate cutting depth is reached.

Chamfered end **499** of sleeve **486** is then inserted into bore **462**. Continuous rotation of bone cutting tool **400** by manipulation of driving device **436**, while simultaneously applying axial and rotational force to sleeve **486**, causes eccentric rotation of tapered drill end **432** allowing the sleeve **486** to be inserted into the bore **462**. Movement of sleeve **486** into bore **462** forces body portion **424** and tapered drill end **432** to cut into bone **462** in a spiraled offset manner. Sleeve **486** is prevented from moving further into bone **412** by flange **498**. As bone **412** is removed from bore **462**, a bone pocket **456** is formed having a 360° shoulder **472** therewith. Each rotation of tapered drill end **432** causes sleeve **486** to more freely move within bore **462**. Accordingly, tapered drill end **432** begins to move freely within bore **462**, but only to the extent permitted by the dimensional offset of inner aperture **448**.

As can be seen in FIG. **58**, bone cutting tool **400** is then centered and reversed out of bore **462** and bone **412**. Bone pocket **456** includes a widened socket **470** and 360° shoulder **472**, corresponding in shape and size to tapered drill end **432**. Bone pocket **456** is sized to receive soft suture anchor **214**, as previously described.

With reference now to FIG. **60**, an alternate sleeve **586** is shown for attachment to the bone cutting tool **400**. Sleeve **586** includes an offset inner aperture **548** and a flange **598**, which function as described above. Accordingly, alternative sleeve **586** is similar to the sleeve **486** of FIGS. **54-59**, but does not include chamfered end **499**. When sleeve **586** is in use, bone cutting tool **400** may be manually angled to allow for insertion of sleeve **586** into bore **462**.

The description of the invention is merely exemplary in nature and, thus, variations that do not depart from the gist of the invention are intended to be within the scope of the invention. For example, any of the above mentioned surgical procedures is applicable to repair of other body portions. For example, the procedures can be equally applied to the repair of wrists, elbows, ankles, and meniscal repair. The suture loops can be passed through bores formed in soft or hard tissue. It is equally envisioned that the loops can be passed through or formed around an aperture or apertures formed in prosthetic devices e.g. humeral, femoral or tibial stems. Further, the suture material and collapsible tubes can be formed of resorbable material. Such variations are not to be regarded as a departure from the spirit and scope of the invention.

What is claimed is:

1. A method for attaching a fixation device to a bone, the method comprising:

bringing a bone cutting tool that extends along a longitudinal axis into engagement with an outer surface of the bone;

rotating the bone cutting tool about the longitudinal axis while driving the bone cutting tool from the outer surface of the bone to a predetermined depth in the bone to form a bore;

16

continuously rotating the bone cutting tool at the predetermined depth while maintaining the bone cutting tool in a substantially stationary position to establish an enlarged bone pocket at a distal end of the bore, the bone pocket defining a shoulder extending around a circumference between the bone pocket and the bore;

removing the bone cutting tool from the bone pocket and the bore;

inserting the fixation device into the bone pocket through the bore; and

positioning the fixation device against the shoulder of the bone pocket.

2. The method of claim 1, wherein continuously rotating the bone cutting tool is performed without removing the bone cutting tool from the bore and after rotating the bone cutting tool into position at the predetermined depth.

3. The method of claim 1, wherein rotating the bone cutting tool about the longitudinal axis pulls the bone cutting tool into the bore.

4. The method of claim 3, further comprising:

creating a helical groove relative to the bore as the bone cutting tool is rotating about the longitudinal axis.

5. The method of claim 3, wherein rotating the bone cutting tool about the longitudinal axis is performed until a stop at a proximal end of the bone cutting tool engages the outer surface of the bone.

6. The method of claim 1, further comprising:

removing the bone at the distal end of the bore to form the bone pocket by the continuously rotating the bone cutting tool at the predetermined depth.

7. The method of claim 1, wherein rotating the bone cutting tool about the longitudinal axis includes forming a first aperture in the bone with a portion of the bone cutting tool having a first diameter.

8. A method for attaching a fixation device to a bone, the method comprising:

bringing a bone cutting tool having a helical flute into engagement with an outer surface of the bone;

rotating the bone cutting tool about a longitudinal axis to form a first bore having a helical flute groove extending from the outer surface of the bone to a depth within the bone;

continuously rotating the bone cutting tool at the depth to establish a second bore having a shoulder and a continuous sidewall, the shoulder extending around a circumference between the second bore and the first bore;

aligning the bone cutting tool with the first bore;

drawing the bone cutting tool out of the second and first bores;

inserting the fixation device into the second bore through the first bore; and

positioning the fixation device against the shoulder of the second bore.

9. The bone cutting tool of claim 8, wherein continuously rotating the bone cutting tool is performed while maintaining the bone cutting tool in a substantially stationary position without removing the bone cutting tool from the first bore.

10. The bone cutting tool of claim 8, wherein rotating the bone cutting tool about the longitudinal axis pulls the bone cutting tool into the bore.

11. The bone cutting tool of claim 10, wherein rotating the bone cutting tool about the longitudinal axis is performed until a stop at a proximal end of the bone cutting tool engages the outer surface of the bone.